

SEQUENCE LISTING

<110> DONG, ZHENG XIN
COY, DAVID H.

<120> GLP-1 ANALOGUES

<130> 00537/187001

<140> 09/206,833

<141> 1998-12-07

<160> 165

<170> PatentIn Ver. 2.0

<210> 1

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<223> this sequence has an amidated.c-terminus

<400> 1

His	Ala	Glu	Gly	Thr	Phe	Thr	Ser	Asp	Val	Ser	Ser	Tyr	Leu	Glu	Gly
1				5					10					15	

Gln	Ala	Ala	Lys	Glu	Phe	Ile	Ala	Trp	Leu	Val	Lys	Gly	Arg
			20					25					30

<210> 2

<211> 31

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<223> this sequence has an amidated c-terminus

<400> 2

His	Ala	Glu	Gly	Thr	Phe	Thr	Ser	Asp	Val	Ser	Ser	Tyr	Leu	Glu	Gly
1				5					10					15	

Gln	Ala	Ala	Lys	Glu	Phe	Ile	Ala	Trp	Leu	Val	Lys	Gly	Arg	Gly
			20					25					30	

<210> 3

<211> 30

<212> PRT

<213> Homo sapiens

<400> 3

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 4

<211> 31

<212> PRT

<213> Homo sapiens

<400> 4

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
 20 25 30

<210> 5

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (20)

<223> N-epsilon-alkanoyl-lysine

<400> 5

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Xaa Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 6

<211> 31

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (20)

<223> N-epsilon-alkanoyl-lysine

<400> 6

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Xaa Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
 20 25 30

<210> 7

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (20)

<223> N-epsilon-alkanoyl-lysine

<220>

<223> this sequence has an amidated c-terminus

<400> 7

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Xaa Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 8

<211> 31

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (20)

<223> N-epsilon-alkanoyl-lysine

<220>

<223> this sequence has an amidated c-terminus

<400> 8

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Xaa Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
 20 25 30

<210> 9

<211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (28)
 <223> N-epsilon-alkanoyl-lysine

<400> 9
 His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15
 Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Xaa Gly Arg
 20 25 30

<210> 10
 <211> 31
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (28)
 <223> N-epsilon-alkanoyl-lysine

<400> 10
 His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15
 Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Xaa Gly Arg Gly
 20 25 30

<210> 11
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (28)
 <223> N-epsilon-alkanoyl-lysine

<220>
 <223> this sequence has an amidated c-terminus

<400> 11

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Xaa Gly Arg
 20 25 30

<210> 12

<211> 31

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (28)

<223> N-epsilon-alkanoyl-lysine

<220>

<223> this sequence has an amidated c-terminus

<400> 12

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Xaa Gly Arg Gly
 20 25 30

<210> 13

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (20)

<223> N-epsilon-alkanoyl-lysine

<220>

<221> MOD_RES

<222> (28)

<223> N-epsilon-alkanoyl-lysine

<400> 13

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Xaa Glu Phe Ile Ala Trp Leu Val Xaa Gly Arg
 20 25 30

<210> 14
 <211> 31
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (20)
 <223> N-epsilon-alkanoyl-lysine

<220>
 <221> MOD_RES
 <222> (28)
 <223> N-epsilon-alkanoyl-lysine

<400> 14
 His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15
 Gln Ala Ala Xaa Glu Phe Ile Ala Trp Leu Val Xaa Gly Arg Gly
 20 25 30

<210> 15
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (20)
 <223> N-epsilon-alkanoyl-lysine

<220>
 <221> MOD_RES
 <222> (28)
 <223> N-epsilon-alkanoyl-lysine

<220>
 <223> this sequence has an amidated c-terminus

<400> 15
 His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15
 Gln Ala Ala Xaa Glu Phe Ile Ala Trp Leu Val Xaa Gly Arg
 20 25 30

<210> 16

<211> 31
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (20)
 <223> N-epsilon-alkanoyl-lysine

<220>
 <221> MOD_RES
 <222> (28)
 <223> N-epsilon-alkanoyl-lysine

<220>
 <223> this sequence has an amidated c-terminus

<400> 16
 His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15
 Gln Ala Ala Xaa Glu Phe Ile Ala Trp Leu Val Xaa Gly Arg Gly
 20 25 30

<210> 17
 <211> 29
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (27)
 <223> N-epsilon-alkanoyl-lysine

<400> 17
 Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly Gln
 1 5 10 15
 Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Xaa Gly Arg
 20 25

<210> 18
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (27)
 <223> N-epsilon-alkanoyl-lysine

<400> 18
 Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly Gln
 1 5 10 15
 Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Xaa Gly Arg Gly
 20 25 30

<210> 19
 <211> 29
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (27)
 <223> N-epsilon-alkanoyl-lysine

<220>
 <223> this sequence has an amidated c-terminus

<400> 19
 Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly Gln
 1 5 10 15
 Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Xaa Gly Arg
 20 25

<210> 20
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (27)
 <223> N-epsilon-alkanoyl-lysine

<220>
 <223> this sequence has an amidated c-terminus

<400> 20
 Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly Gln
 1 5 10 15

Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Xaa Gly Arg Gly
 20 25 30

<210> 21
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (30)
 <223> N-epsilon-alkanoyl-lysine

<400> 21
 His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Arg Gly Xaa
 20 25 30

<210> 22
 <211> 31
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (30)
 <223> N-epsilon-alkanoyl-lysine

<400> 22
 His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Arg Gly Xaa Gly
 20 25 30

<210> 23
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (30)

<223> N-epsilon-alkanoyl-lysine

<220>

<223> this sequence has an amidated c-terminus

<400> 23

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Arg Gly Xaa
 20 25 30

<210> 24

<211> 31

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (30)

<223> N-epsilon-alkanoyl-lysine

<220>

<223> this sequence has an amidated c-terminus

<400> 24

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Arg Gly Xaa Gly
 20 25 30

<210> 25

<211> 30

<212> PRT

<213> Homo sapiens

<400> 25

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 26

<211> 31

<212> PRT

<213> Homo sapiens

<400> 26

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly

1 5 10 15
 Gln Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
 20 25 30

<210> 27
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <223> this sequence has an amidated c-terminus

<400> 27
 His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 28
 <211> 31
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <223> this sequence has an amidated c-terminus

<400> 28
 His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
 20 25 30

<210> 29
 <211> 30
 <212> PRT
 <213> Homo sapiens

<400> 29
 His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Arg Gly Arg
 20 25 30

<210> 30
 <211> 31
 <212> PRT
 <213> Homo sapiens

<400> 30
 His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15
 Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Arg Gly Arg Gly
 20 25 30

<210> 31
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <223> this sequence has an amidated c-terminus

<400> 31
 His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15
 Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Arg Gly Arg
 20 25 30

<210> 32
 <211> 31
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <223> this sequence has an amidated c-terminus

<400> 32
 His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15
 Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Arg Gly Arg Gly
 20 25 30

<210> 33
 <211> 30
 <212> PRT
 <213> Homo sapiens

<400> 33

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1, 5 10 15

Gln' Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Arg Gly Arg
 20 25 30

<210> 34

<211> 31

<212> PRT

<213> Homo sapiens

<400> 34

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Arg Gly Arg Gly
 20 25 30

<210> 35

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<223> this sequence has an amidated c-terminus

<400> 35

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Arg Gly Arg
 20 25 30

<210> 36

<211> 31

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<223> this sequence has an amidated c-terminus

<400> 36

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Arg Gly Arg Gly
 20 25 30

<210> 37
 <211> 30
 <212> PRT
 <213> Homo sapiens

<400> 37
 His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15
 Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Lys
 20 25 30

<210> 38
 <211> 31
 <212> PRT
 <213> Homo sapiens

<400> 38
 His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15
 Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Lys Gly
 20 25 30

<210> 39
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <223> this sequence has an amidated c-terminus

<400> 39
 His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15
 Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Lys
 20 25 30

<210> 40
 <211> 31
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <223> this sequence has an amidated c-terminus

<400> 40

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Lys Gly
 20 25 30

<210> 41

<211> 30

<212> PRT

<213> Homo sapiens

<400> 41

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Lys Gly Lys
 20 25 30

<210> 42

<211> 31

<212> PRT

<213> Homo sapiens

<400> 42

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Lys Gly Lys Gly
 20 25 30

<210> 43

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<223> this sequence has an amidated c-terminus

<400> 43

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Lys Gly Lys
 20 25 30

<210> 44

<211> 31

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<223> this sequence has an amidated c-terminus

<400> 44

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Lys Gly Lys Gly
 20 25 30

<210> 45

<211> 30

<212> PRT

<213> Homo sapiens

<400> 45

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Arg Gly Lys
 20 25 30

<210> 46

<211> 31

<212> PRT

<213> Homo sapiens

<400> 46

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Arg Gly Lys Gly
 20 25 30

<210> 47

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<223> this sequence has an amidated c-terminus

<400> 47

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Arg Gly Lys

20

25

30

<210> 48
 <211> 31
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <223> this sequence has an amidated c-terminus

<400> 48
 His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15
 Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Arg Gly Lys Gly
 20 25 30

<210> 49
 <211> 30
 <212> PRT
 <213> Homo sapiens

<400> 49
 His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15
 Gln Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Arg Gly Lys
 20 25 30

<210> 50
 <211> 31
 <212> PRT
 <213> Homo sapiens

<400> 50
 His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15
 Gln Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Arg Gly Lys Gly
 20 25 30

<210> 51
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>

<223> this sequence has an amidated c-terminus

<400> 51

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Arg Gly Lys
 20 25 30

<210> 52

<211> 31

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<223> this sequence has an amidated c-terminus

<400> 52

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Arg Gly Lys Gly
 20 25 30

<210> 53

<211> 30

<212> PRT

<213> Homo sapiens

<400> 53

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Asp Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 54

<211> 31

<212> PRT

<213> Homo sapiens

<400> 54

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Asp Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
 20 25 30

<210> 55

<211> 30

<212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <223> this sequence has an amidated c-terminus

<400> 55
 His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Asp Gly
 1 5 10 15
 Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 56
 <211> 31
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <223> this sequence has an amidated c-terminus

<400> 56
 His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Asp Gly
 1 5 10 15
 Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
 20 25 30

<210> 57
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (2)
 <223> alpha-aminoisobutyric acid

<400> 57
 His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15
 Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 58
 <211> 31
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (2)
 <223> alpha-aminoisobutyric acid

<400> 58
 His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15
 Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
 20 25 30

<210> 59
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (2)
 <223> alpha-aminoisobutyric acid

<220>
 <223> this sequence has an amidated c-terminus

<400> 59
 His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15
 Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 60
 <211> 31
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (2)
 <223> alpha-aminoisobutyric acid

<220>

<223> this sequence has an amidated c-terminus

<400> 60

His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
 20 25 30

<210> 61

<211> 30

<212> PRT

<213> Homo sapiens

<400> 61

His Ala Asp Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 62

<211> 31

<212> PRT

<213> Homo sapiens

<400> 62

His Ala Asp Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
 20 25 30

<210> 63

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<223> this sequence has an amidated c-terminus

<400> 63

His Ala Asp Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 64
 <211> 31
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <223> this sequence has an amidated c-terminus

<400> 64
 His Ala Asp Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15
 Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
 20 25 30

<210> 65
 <211> 30
 <212> PRT
 <213> Homo sapiens

<400> 65
 Tyr Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15
 Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 66
 <211> 31
 <212> PRT
 <213> Homo sapiens

<400> 66
 Tyr Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15
 Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
 20 25 30

<210> 67
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <223> this sequence has an amidated c-terminus

<400> 67

Tyr Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 68
 <211> 31
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <223> this sequence has an amidated c-terminus

<400> 68
 Tyr Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
 20 25 30

<210> 69
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (1)
 <223> N-acyl-histidine

<400> 69
 Xaa Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 70
 <211> 31
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES

<222> (1)
 <223> N-acyl-histidine

<400> 70
 Xaa Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
 20 25 30

<210> 71
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (1)
 <223> N-acyl-histidine

<220>
 <223> this sequence has an amidated,c-terminus

<400> 71
 Xaa Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 72
 <211> 31
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (1)
 <223> N-acyl-histidine

<220>
 <223> this sequence has an amidated c-terminus

<400> 72
 Xaa Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
 20 25 30

<210> 73
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (1)
 <223> N-alkyl-histidine

<400> 73
 Xaa Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 74
 <211> 31
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (1)
 <223> N-alkyl-histidine

<400> 74
 Xaa Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
 20 25 30

<210> 75
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (1)
 <223> N-alkyl-histidine

<220>

<223> this sequence has an amidated c-terminus

<400> 75

Xaa Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 76

<211> 31

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (1)

<223> N-alkyl-histidine

<220>

<223> this sequence has an amidated c-terminus

<400> 76

Xaa Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
 20 25 30

<210> 77

<211> 29

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (1)

<223> N-methyl-alanine

<400> 77

Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly Gln
 1 5 10 15

Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25

<210> 78

<211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (1)
 <223> N-methyl-alanine

<400> 78
 Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly Gln
 1 5 10 15

Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
 20 25 30

<210> 79
 <211> 30
 <212> PRT
 <213> Homo sapiens

<400> 79
 His Ala Glu Gly Thr Phe Thr Ser Glu Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 80
 <211> 31
 <212> PRT
 <213> Homo sapiens

<400> 80
 His Ala Glu Gly Thr Phe Thr Ser Glu Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
 20 25 30

<210> 81
 <211> 30
 <212> PRT
 <213> Homo sapiens

<400> 81
 His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Phe Leu Val Lys Gly Arg
 20 25 30

<210> 82
 <211> 31
 <212> PRT
 <213> Homo sapiens

<400> 82
 His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15
 Gln Ala Ala Lys Glu Phe Ile Ala Phe Leu Val Lys Gly Arg Gly
 20 25 30

<210> 83
 <211> 29
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (13)
 <223> beta-(3-pyridinyl)alanine

<220>
 <221> MOD_RES
 <222> (25)
 <223> beta-(3-pyridinyl)alanine

<220>
 <223> this sequence has an amidated c-terminus

<400> 83
 His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ala Xaa Leu Glu Gly
 1 5 10 15
 Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Val Lys Gly
 20 25

<210> 84
 <211> 29
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (13)
 <223> beta-(3-pyridinyl)alanine

<220>
 <221> MOD_RES
 <222> (25)
 <223> beta-(3-pyridinyl)alanine

<220>
 <223> this sequence has an amidated c-terminus

<400> 84
 His Ala Glu Gly Thr Phe Thr Ser Asp Ala Ser Ser Xaa Leu Glu Gly
 1 5 10 15
 Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Val Lys Gly
 20 25

<210> 85
 <211> 29
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (13)
 <223> beta-(3-pyridinyl)alanine

<220>
 <221> MOD_RES
 <222> (25)
 <223> beta-(3-pyridinyl)alanine

<220>
 <223> this sequence has an amidated c-terminus

<400> 85
 His Ala Glu Gly Thr Phe Thr Ala Asp Val Ser Ser Xaa Leu Glu Gly
 1 5 10 15
 Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Val Lys Gly
 20 25

<210> 86
 <211> 29
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (13)
 <223> beta-(3-pyridinyl)alanine

<220>

<221> MOD_RES

<222> (25)

<223> beta-(3-pyridinyl)alanine

<220>

<223> this sequence has an amidated c-terminus

<400> 86

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Xaa Leu Glu Ala
 1 5 10 15

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Val Lys Gly
 20 25

<210> 87

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (1)

<223> 3-(p-hydroxyphenyl)propionic acid

<220>

<223> this sequence has an amidated c-terminus

<400> 87

Xaa Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 88

<211> 29

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (13)

<223> beta-(3-pyridinyl)alanine

<220>

<221> MOD_RES

<222> (25)

<223> beta-(3-pyridinyl)alanine

<220>

<223> this sequence has an amidated c-terminus

<400> 88

His Ala Glu Gly Thr Phe Thr Ser Ala Val Ser Ser Xaa Leu Glu Gly
 1 5 10 15

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Val Lys Gly
 20 25

<210> 89

<211> 29

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (13)

<223> beta-(3-pyridinyl)alanine

<220>

<221> MOD_RES

<222> (25)

<223> beta-(3-pyridinyl)alanine

<220>

<223> this sequence has an amidated c-terminus

<400> 89

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ala Ser Xaa Leu Glu Gly
 1 5 10 15

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Val Lys Gly
 20 25

<210> 90

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (13)

<223> beta-(3-pyridinyl)alanine

<220>

<221> MOD_RES

<222> (25)
 <223> beta-(3-pyridinyl)alanine

<220>
 <221> MOD_RES
 <222> (28)
 <223> gamma-aminobutyric acid

<220>
 <223> this sequence has an amidated c-terminus

<400> 90
 His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Xaa Leu Glu Ala
 1 5 10 15

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Val Xaa
 20 25

<210> 91
 <211> 28
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (13)
 <223> beta-(3-pyridinyl)alanine

<220>
 <221> MOD_RES
 <222> (25)
 <223> beta-(3-pyridinyl)alanine

<220>
 <221> MOD_RES
 <222> (28)
 <223> gamma-aminobutyric acid

<220>
 <223> this sequence has an amidated c-terminus

<400> 91
 His Ala Glu Gly Thr Phe Thr Ser Ala Val Ser Ser Xaa Leu Glu Ala
 1 5 10 15

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Val Xaa
 20 25

<210> 92
 <211> 28
 <212> PRT
 <213> Artificial Sequence


```

<220>
<223> Description of Artificial Sequence: Mutagen
|
<220>
<221> MOD_RES
<222> (13)
<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (25)
<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (28)
<223> gamma-aminobutyric acid

<220>
<223> this sequence has an amidated c-terminus

<400> 92
His Ala Glu Gly Thr Phe Thr Ser Asp Val Ala Ser Xaa Leu Glu Ala
  1             5             10             15

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Val Xaa
      20             25

<210> 93
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (13)
<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (25)
<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (28)
<223> gamma-aminobutyric acid

<220>
<223> this sequence has an amidated c-terminus

<400> 93

```

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ala Xaa Leu Glu Ala
 1 5 10 15

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Val Xaa
 20 25

<210> 94
 <211> 28
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (13)
 <223> beta-(3-pyridinyl)alanine

<220>
 <221> MOD_RES
 <222> (25)
 <223> beta-(3-pyridinyl)alanine

<220>
 <221> MOD_RES
 <222> (28)
 <223> gamma-aminobutyric acid

<220>
 <223> this sequence has an amidated c-terminus

<400> 94
 His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Xaa Leu Ala Ala
 1 5 10 15

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Val Xaa
 20 25

<210> 95
 <211> 28
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (13)
 <223> beta-(3-pyridinyl)alanine

<220>
 <221> MOD_RES
 <222> (25)

<223> beta-(3-pyridinyl)alanine

<220>

<221> MOD_RES

<222> (28)

<223> gamma-aminobutyric acid

<220>

<223> this sequence has an amidated c-terminus

<400> 95

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Xaa Leu Glu Ala
1 5 10 15

Ala Ala Ala Ala Ala Phe Ile Ala Xaa Leu Val Xaa
20 25

<210> 96

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (13)

<223> beta-(3-pyridinyl)alanine

<220>

<221> MOD_RES

<222> (25)

<223> beta-(3-pyridinyl)alanine

<220>

<221> MOD_RES

<222> (28)

<223> gamma-aminobutyric acid

<220>

<223> this sequence has an amidated c-terminus

<400> 96

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Xaa Leu Glu Ala
1 5 10 15

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Ala Val Xaa
20 25

<210> 97

<211> 27

<212> PRT

<213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (13)
 <223> beta-(3-pyridinyl)alanine

<220>
 <221> MOD_RES
 <222> (25)
 <223> beta-(3-pyridinyl)alanine

<220>
 <221> MOD_RES
 <222> (27)
 <223> gamma-aminobutyric acid

<220>
 <223> this sequence has an amidated c-terminus

<400> 97
 His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Xaa Leu Glu Ala
 1 5 10 15

Ala Ala Ala Ala Ala Phe Ile Ala Xaa Leu Xaa
 20 25

<210> 98
 <211> 27
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (13)
 <223> beta-(3-pyridinyl)alanine

<220>
 <221> MOD_RES
 <222> (25)
 <223> beta-(3-pyridinyl)alanine

<220>
 <221> MOD_RES
 <222> (27)
 <223> gamma-aminobutyric acid

<220>
 <223> this sequence has an amidated c-terminus

<400> 98
 His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Xaa Leu Glu Ala

1	5	10	15
Ala	Ala	Ala	Lys
	Ala	Phe	Ile
	Ala	Ala	Leu
		Xaa	
	20	25	

<210> 99
 <211> 27
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (13)
 <223> beta-(3-pyridinyl)alanine

<220>
 <221> MOD_RES
 <222> (25)
 <223> beta-(3-pyridinyl)alanine

<220>
 <221> MOD_RES
 <222> (27)
 <223> gamma-aminobutyric acid

<220>
 <223> this sequence has an amidated c-terminus

<400> 99
His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Xaa Leu Glu Ala
1 5 10 15

Ala Ala Ala Lys Ala Ala Ile Ala Xaa Leu Xaa
20 25

<210> 100
 <211> 27
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (13)
 <223> beta-(3-pyridinyl)alanine

<220>
 <221> MOD_RES
 <222> (25)
 <223> beta-(3-pyridinyl)alanine

<220>

<221> MOD_RES

<222> (27)

<223> gamma-aminobutyric acid

<220>

<223> this sequence has an amidated c-terminus

<400> 100

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Xaa Leu Glu Ala
 1 5 10 15

Ala Ala Ala Lys Ala Phe Ala Ala Xaa Leu Xaa
 20 25

<210> 101

<211> 27

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (13)

<223> beta-(3-pyridinyl)alanine

<220>

<221> MOD_RES

<222> (25)

<223> beta-(3-pyridinyl)alanine

<220>

<221> MOD_RES

<222> (27)

<223> gamma-aminobutyric acid

<220>

<223> this sequence has an amidated c-terminus

<400> 101

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Xaa Leu Glu Gly
 1 5 10 15

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Xaa
 20 25

<210> 102

<211> 27

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (13)

<223> beta-(3-pyridinyl)alanine

<220>

<221> MOD_RES

<222> (25)

<223> beta-(3-pyridinyl)alanine

<220>

<221> MOD_RES

<222> (27)

<223> gamma-aminobutyric acid

<220>

<223> this sequence has an amidated c-terminus

<400> 102

His	Ala	Glu	Gly	Thr	Phe	Thr	Ser	Asp	Val	Ser	Ser	Xaa	Ala	Glu	Ala
1				5					10					15	

Ala	Ala	Ala	Lys	Ala	Phe	Ile	Ala	Xaa	Leu	Xaa
			20					25		

<210> 103

<211> 27

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (13)

<223> beta-(3-pyridinyl)alanine

<220>

<221> MOD_RES

<222> (25)

<223> beta-(3-pyridinyl)alanine

<220>

<221> MOD_RES

<222> (27)

<223> gamma-aminobutyric acid

<220>

<223> this sequence has an amidated c-terminus

<400> 103

His	Ala	Glu	Gly	Thr	Phe	Thr	Ser	Asp	Val	Ser	Ser	Xaa	Leu	Glu	Ala
1				5					10					15	

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Xaa
 20 25

<210> 104
 <211> 27
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (13)
 <223> beta-(3-pyridinyl)alanine

<220>
 <221> MOD_RES
 <222> (25)
 <223> beta-(3-pyridinyl)alanine

<220>
 <221> MOD_RES
 <222> (27)
 <223> gamma-aminobutyric acid

<220>
 <223> this sequence has an amidated c-terminus

<400> 104
 His Ala Glu Gly Thr Phe Thr Ser Asp Val Ala Ser Xaa Leu Glu Ala
 1 5 10 15

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Xaa
 20 25

<210> 105
 <211> 28
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (13)
 <223> beta-(3-pyridinyl)alanine

<220>
 <221> MOD_RES
 <222> (20)
 <223> beta-(3-pyridinyl)alanine

<220>
 <221> MOD_RES
 <222> (25)
 <223> beta-(3-pyridinyl)alanine

<220>
 <223> this sequence has an amidated c-terminus

<400> 105
 His Ala Glu Gly Thr Phe Thr Ser Asp Val Ala Ser Xaa Leu Glu Gly
 1 5 10 15
 Ala Ala Ala Xaa Ala Phe Ile Ala Xaa Leu Val Lys
 20 25

<210> 106
 <211> 28
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (13)
 <223> beta-(3-pyridinyl)alanine

<220>
 <221> MOD_RES
 <222> (25)
 <223> beta-(3-pyridinyl)alanine

<220>
 <223> this sequence has an amidated c-terminus

<400> 106
 His Ala Glu Gly Thr Phe Thr Ser Asp Val Ala Ser Xaa Leu Glu Gly
 1 5 10 15
 Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Val Lys
 20 25

<210> 107
 <211> 28
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (2)
 <223> alpha-aminoisobutyric acid

<220>
 <221> MOD_RES
 <222> (13)
 <223> beta-(3-pyridinyl)alanine

<220>
 <221> MOD_RES
 <222> (25)
 <223> beta-(3-pyridinyl)alanine

<220>
 <221> MOD_RES
 <222> (28)
 <223> gamma-aminobutyric acid

<220>
 <223> this sequence has an amidated c-terminus

<400> 107
 His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ala Ser Xaa Leu Glu Gly
 1 5 10 15

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Val Xaa
 20 25

<210> 108
 <211> 27
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (2)
 <223> alpha-aminoisobutyric acid

<220>
 <221> MOD_RES
 <222> (13)
 <223> beta-(3-pyridinyl)alanine

<220>
 <221> MOD_RES
 <222> (25)
 <223> beta-(3-pyridinyl)alanine

<220>
 <223> this sequence has an amidated c-terminus

<400> 108
 His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ala Ser Xaa Leu Glu Ala
 1 5 10 15

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Val
 20 25

<210> 109
 <211> 28
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (13)
 <223> beta-(3-pyridinyl)alanine

<220>
 <221> MOD_RES
 <222> (25)
 <223> beta-(3-pyridinyl)alanine

<220>
 <221> MOD_RES
 <222> (28)
 <223> gamma-aminobutyric acid

<220>
 <223> this sequence has an amidated c-terminus

<400> 109
 His Ala Glu Gly Thr Phe Thr Ser Asp Val Ala Ala Xaa Leu Glu Gly
 1 5 10 15

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Val Xaa
 20 25

<210> 110
 <211> 28
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (13)
 <223> beta-(3-pyridinyl)alanine

<220>
 <221> MOD_RES
 <222> (25)
 <223> beta-(3-pyridinyl)alanine

<220>

<221> MOD_RES
 <222> (27)
 <223> tert-butylglycine

<220>
 <221> MOD_RES
 <222> (28)
 <223> gamma-aminobutyric acid

<220>
 <223> this sequence has an amidated c-terminus

<400> 110
 His Ala Glu Gly Thr Phe Thr Ser Asp Val Ala Ser Xaa Leu Glu Gly
 1 5 10 15
 Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Xaa Xaa
 20 25

<210> 111
 <211> 28
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (10)
 <223> tert-butylglycine

<220>
 <221> MOD_RES
 <222> (13)
 <223> beta-(3-pyridinyl)alanine

<220>
 <221> MOD_RES
 <222> (25)
 <223> beta-(3-pyridinyl)alanine

<220>
 <221> MOD_RES
 <222> (28)
 <223> gamma-aminobutyric acid

<220>
 <223> this sequence has an amidated c-terminus

<400> 111
 His Ala Glu Gly Thr Phe Thr Ser Asp Xaa Ala Ser Xaa Leu Glu Gly
 1 5 10 15
 Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Val Xaa
 20 25

<210> 112
 <211> 27
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (2)
 <223> alpha-aminoisobutyric acid

<220>
 <221> MOD_RES
 <222> (13)
 <223> beta-(3-pyridinyl)alanine

<220>
 <221> MOD_RES
 <222> (25)
 <223> beta-(3-pyridinyl)alanine

<220>
 <223> this sequence has an amidated c-terminus

<400> 112
 His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ala Ala Xaa Leu Glu Ala
 1 5 10 15

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Val
 20 25

<210> 113
 <211> 28
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (10)
 <223> tert-butylglycine

<220>
 <221> MOD_RES
 <222> (13)
 <223> beta-(3-pyridinyl)alanine

<220>
 <221> MOD_RES
 <222> (14)

<223> tert-butylglycine

<220>

<221> MOD_RES

<222> (25)

<223> beta-(3-pyridinyl)alanine

<220>

<221> MOD_RES

<222> (28)

<223> gamma-aminobutyric acid

<220>

<223> this sequence has an amidated c-terminus

<400> 113

His	Ala	Glu	Gly	Thr	Phe	Thr	Ser	Asp	Xaa	Ala	Ala	Xaa	Xaa	Glu	Ala
1				5					10					15	

Ala	Ala	Ala	Lys	Ala	Phe	Ile	Ala	Xaa	Leu	Val	Xaa
			20				25				

<210> 114

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (2)

<223> alpha-aminoisobutyric acid

<220>

<221> MOD_RES

<222> (26)

<223> 1-amino-1-cyclohexanecarboxylic acid

<220>

<223> this sequence has an amidated c-terminus

<400> 114

His	Xaa	Glu	Gly	Thr	Phe	Thr	Ser	Asp	Val	Ser	Ser	Tyr	Leu	Glu	Gly
1				5					10					15	

Gln	Ala	Ala	Lys	Glu	Phe	Ile	Ala	Trp	Xaa	Val	Lys	Gly	Arg
			20				25					30	

<210> 115

<211> 30

<212> PRT

<213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (14)
 <223> 1-amino-1-cyclohexanecarboxylic acid

<220>
 <221> MOD_RES
 <222> (26)
 <223> 1-amino-1-cyclohexanecarboxylic acid

<220>
 <223> this sequence has an amidated c-terminus

<400> 115
 His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Xaa Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Xaa Val Lys Gly Arg
 20 25 30

<210> 116
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (2)
 <223> alpha-aminoisobutyric acid

<220>
 <223> this sequence has an amidated c-terminus

<400> 116
 His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 117
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (1)

<223> N,N-tetramethylamidinohistidine

<220>

<223> this sequence has an amidated c-terminus

<400> 117

Xaa Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 118

<211> 29

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (1)

<223> 1-amino-1-cyclohexanecarboxylic acid

<220>

<223> this sequence has an amidated c-terminus

<400> 118

Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly Gln
 1 5 10 15

Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25

<210> 119

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (2)

<223> 1-amino-1-cyclohexanecarboxylic acid

<220>

<223> this sequence has an amidated c-terminus

<400> 119

His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly



<220>
<223> Description of Artificial Sequence: Mutagen

```
<220>  
<221> MOD_RES  
<222> (14)  
<223> 1-amino-1-cyclohexanecarboxylic acid
```

<400> 120
His Ala Glu Gly Thr Phe Thr Ser Asp Xaa Ser Ser Tyr Xaa Glu Gly
1 5 10 15

```
<210> 121
<211> 30
<212> PRT
<213> Artificial Sequence
```

```
<220>  
<221> MOD_RES  
<222> (23)  
<223> 1-amino-1-cyclohexanecarboxylic acid
```

```
<220>  
<221> MOD_RES  
<222> (26)  
<223> 1-amino-1-cyclohexanecarboxylic acid
```

```
<220>  
<223> this sequence has an amidated c-terminus
```

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Xaa Ala Trp Xaa Val Lys Gly Arg
 20 25 30

<210> 122
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (14)
 <223> 1-amino-1-cyclohexanecarboxylic acid

<220>
 <221> MOD_RES
 <222> (18)
 <223> alpha-aminoisobutyric acid

<220>
 <223> this sequence has an amidated c-terminus

<400> 122
 His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Xaa Glu Gly
 1 5 10 15

Gln Xaa Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 123
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (18)
 <223> alpha-aminoisobutyric acid

<220>
 <221> MOD_RES
 <222> (23)
 <223> 1-amino-1-cyclohexanecarboxylic acid

<220>
 <221> MOD_RES
 <222> (26)

<223> 1-amino-1-cyclohexanecarboxylic acid

<220>

<223> this sequence has an amidated c-terminus

<400> 123

His	Ala	Glu	Gly	Thr	Phe	Thr	Ser	Asp	Val	Ser	Ser	Tyr	Leu	Glu	Gly
1				5					10					15	

Gln	Xaa	Ala	Lys	Glu	Phe	Xaa	Ala	Trp	Xaa	Val	Lys	Gly	Arg
			20					25					30

<210> 124

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (10)

<223> 1-amino-1-cyclohexanecarboxylic acid

<220>

<221> MOD_RES

<222> (23)

<223> 1-amino-1-cyclohexanecarboxylic acid

<220>

<221> MOD_RES

<222> (26)

<223> 1-amino-1-cyclohexanecarboxylic acid

<220>

<223> this sequence has an amidated c-terminus

<400> 124

His	Ala	Glu	Gly	Thr	Phe	Thr	Ser	Asp	Xaa	Ser	Ser	Tyr	Leu	Glu	Gly
1				5					10					15	

Gln	Ala	Ala	Lys	Glu	Phe	Xaa	Ala	Trp	Xaa	Val	Lys	Gly	Arg
			20					25					30

<210> 125

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (1)
 <223> urocanic acid

<220>
 <223> this sequence has an amidated c-terminus

<400> 125
 Xaa Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15
 Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 126
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (1)
 <223> trans-3-(3-pyridyl)acrylic acid

<220>
 <223> this sequence has an amidated c-terminus

<400> 126
 Xaa Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15
 Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 127
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (1)
 <223> (4-pyridylthio)acetic acid

<220>
 <223> this sequence has an amidated c-terminus

<400> 127
 Xaa Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 128
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (2)
 <223> N-methylalanine

<220>
 <223> this sequence has an amidated c-terminus

<400> 128
 His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 129
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (2)
 <223> N-methylglycine

<220>
 <223> this sequence has an amidated c-terminus

<400> 129
 His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 130
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (2)
 <223> 1-amino-1-cyclopentanecarboxylic acid

<400> 130
 His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 131
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (3)
 <223> N-methylglutamic acid

<220>
 <223> this sequence has an amidated c-terminus

<400> 131
 His Ala Xaa Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 132
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (2)
 <223> 1-amino-1-cyclopentanecarboxylic acid

<220>
 <221> MOD_RES
 <222> (14)

<223> 1-amino-1-cyclohexanecarboxylic acid

<220>

<221> MOD_RES

<222> (26)

<223> 1-amino-1-cyclohexanecarboxylic acid

<220>

<223> this sequence has an amidated c-terminus

<400> 132

His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Xaa Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Xaa Val Lys Gly Arg
 20 25 30

<210> 133

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (2)

<223> alpha-aminoisobutyric acid

<220>

<221> MOD_RES

<222> (26)

<223> 1-amino-1-cyclohexanecarboxylic acid

<220>

<223> this sequence has an amidated c-terminus

<400> 133

His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Xaa Val Lys Gly Arg
 20 25 30

<210> 134

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (2)
 <223> alpha-aminoisobutyric acid

<220>
 <221> MOD_RES
 <222> (19)
 <223> alpha-aminoisobutyric acid

<220>
 <223> this sequence has an amidated c-terminus

<400> 134
 His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15
 Gln Ala Xaa Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 135
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (2)
 <223> alpha-aminoisobutyric acid

<220>
 <221> MOD_RES
 <222> (18)
 <223> alpha-aminoisobutyric acid

<220>
 <223> this sequence has an amidated c-terminus

<400> 135
 His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15
 Gln Xaa Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 136
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES
 <222> (2)
 <223> alpha-aminoisobutyric acid

<220>
 <221> MOD_RES
 <222> (24)
 <223> alpha-aminoisobutyric acid

<220>
 <223> this sequence has an amidated c-terminus

<400> 136
 His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15
 Gln Ala Ala Lys Glu Phe Ile Xaa Trp Leu Val Lys Gly Arg
 20 25 30

<210> 137
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (2)
 <223> alpha-aminoisobutyric acid

<220>
 <221> MOD_RES
 <222> (14)
 <223> cyclohexylalanine

<220>
 <223> this sequence has an amidated c-terminus

<400> 137
 His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Xaa Glu Gly
 1 5 10 15
 Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 138
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (2)
 <223> alpha-aminoisobutyric acid

<220>
 <221> MOD_RES
 <222> (26)
 <223> cyclohexylalanine

<220>
 <223> this sequence has an amidated c-terminus

<400> 138
 His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15
 Gln Ala Ala Lys Glu Phe Ile Ala Trp Xaa Val Lys Gly Arg
 20 25 30

<210> 139
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (2)
 <223> alpha-aminoisobutyric acid

<220>
 <223> this sequence has an amidated c-terminus

<400> 139
 His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15
 Glu Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 140
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (2)
 <223> alpha-aminoisobutyric acid

<220>
 <221> MOD_RES
 <222> (14)
 <223> 1-amino-1-cyclohexanecarboxylic acid

<220>
 <223> this sequence has an amidated c-terminus

<400> 140
 His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Xaa Glu Gly
 1 5 10 15
 Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 141
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (2)
 <223> alpha-aminoisobutyric acid

<220>
 <221> MOD_RES
 <222> (14)
 <223> 1-amino-1-cyclohexanecarboxylic acid

<220>
 <221> MOD_RES
 <222> (26)
 <223> 1-amino-1-cyclohexanecarboxylic acid

<220>
 <223> this sequence has an amidated c-terminus

<400> 141
 His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Xaa Glu Gly
 1 5 10 15
 Gln Ala Ala Lys Glu Phe Ile Ala Trp Xaa Val Lys Gly Arg
 20 25 30

<210> 142
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (2)

<223> alpha-aminoisobutyric acid

<220>

<221> MOD_RES

<222> (16)

<223> alpha-aminoisobutyric acid

<220>

<223> this sequence has an amidated c-terminus

<400> 142

His	Xaa	Glu	Gly	Thr	Phe	Thr	Ser	Asp	Val	Ser	Ser	Tyr	Leu	Glu	Xaa
1				5				10					15		

Gln	Ala	Ala	Lys	Glu	Phe	Ile	Ala	Trp	Leu	Val	Lys	Gly	Arg
			20				25					30	

<210> 143

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (2)

<223> alpha-aminoisobutyric acid

<220>

<221> MOD_RES

<222> (16)

<223> beta alanine

<220>

<223> this sequence has an amidated c-terminus

<400> 143

His	Xaa	Glu	Gly	Thr	Phe	Thr	Ser	Asp	Val	Ser	Ser	Tyr	Leu	Glu	Xaa
1				5				10					15		

Gln	Ala	Ala	Lys	Glu	Phe	Ile	Ala	Trp	Leu	Val	Lys	Gly	Arg
			20				25					30	

<210> 144

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (2)

<223> alpha-aminoisobutyric acid

<220>

<223> this sequence has an amidated c-terminus

<400> 144

His	Xaa	Glu	Gly	Thr	Phe	Thr	Ser	Asp	Val	Ser	Ser	Tyr	Leu	Glu	Gly
1				5					10				15		

Gln	Ala	Lys	Lys	Glu	Phe	Ile	Ala	Trp	Leu	Val	Lys	Gly	Arg
		20					25					30	

<210> 145

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (2)

<223> alpha-aminoisobutyric acid

<220>

<221> MOD_RES

<222> (6)

<223> 1-amino-1-cyclohexanecarboxylic acid

<220>

<223> this sequence has an amidated c-terminus

<400> 145

His	Xaa	Glu	Gly	Thr	Xaa	Thr	Ser	Asp	Val	Ser	Ser	Tyr	Leu	Glu	Gly
1				5					10				15		

Gln	Ala	Ala	Lys	Glu	Phe	Ile	Ala	Trp	Leu	Val	Lys	Gly	Arg
			20				25					30	

<210> 146

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES
 <222> (2)
 <223> alpha-aminoisobutyric acid

<220>
 <221> MOD_RES
 <222> (23)
 <223> 1-amino-1-cyclohexanecarboxylic acid

<220>
 <223> this sequence has an amidated c-terminus

<400> 146
 His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15
 Gln Ala Ala Lys Glu Phe Xaa Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 147
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (2)
 <223> alpha-aminoisobutyric acid

<220>
 <221> MOD_RES
 <222> (27)
 <223> 1-amino-1-cyclohexanecarboxylic acid

<220>
 <223> this sequence has an amidated c-terminus

<400> 147
 His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15
 Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Xaa Lys Gly Arg
 20 25 30

<210> 148
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (2)
 <223> alpha-aminoisobutyric acid

<220>
 <221> MOD_RES
 <222> (8)
 <223> alpha-aminoisobutyric acid

<220>
 <223> this sequence has an amidated c-terminus

<400> 148
 His Xaa Glu Gly Thr Phe Thr Xaa Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15
 Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 149
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (2)
 <223> alpha-aminoisobutyric acid

<220>
 <221> MOD_RES
 <222> (12)
 <223> alpha-aminoisobutyric acid

<220>
 <223> this sequence has an amidated c-terminus

<400> 149
 His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Xaa Tyr Leu Glu Gly
 1 5 10 15
 Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 150
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (2)
 <223> alpha-aminoisobutyric acid

<220>
 <221> MOD_RES
 <222> (11)
 <223> alpha-aminoisobutyric acid

<220>
 <223> this sequence has an amidated c-terminus

<400> 150
 His Xaa Glu Gly Thr Phe Thr Ser Asp Val Xaa Ser Tyr Leu Glu Gly
 1 5 10 15
 Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 151
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (13)
 <223> [125I]-3-iodotyrosine

<400> 151
 His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Xaa Leu Glu Gly
 1 5 10 15
 Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 152
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MUTAGEN
 <222> (1)...(1)
 <223> N-alpha-(4-(2-hydroxyethyl)-1-piperazine-ethanesulfonyl)-histidine

<220>

<223> this sequence has an amidated c-terminus

<400> 152

Xaa Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 153

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (1)

<223> N-alpha-(4-(2-hydroxyethyl)-1-piperazineacetyl)-
 -histidine

<220>

<223> this sequence has an amidated c-terminus

<400> 153

Xaa Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

<210> 154

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (2)

<223> alpha-aminoisobutyric acid

<220>

<221> MOD_RES

<222> (27)

<223> 1-amino-1-cyclopentancarboxylic acid

<220>

<223> this sequence has an amidated c-terminus

<400> 154

His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Xaa Lys Gly Arg
 20 25 30

<210> 155

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (2)

<223> alpha-aminoisobutyric acid

<220>

<221> MOD_RES

<222> (26)

<223> 1-amino-1-cyclohexanecarboxylic acid

<220>

<221> MOD_RES

<222> (30)

<223> N-epsilon-tetradecanoyl-lysine

<220>

<223> this sequence has an amidated c-terminus

<400> 155

His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Xaa Val Lys Gly Xaa
 20 25 30

<210> 156

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (2)

<223> alpha-aminoisobutyric acid

<220>

<221> MOD_RES

<222> (26)
 <223> 1-amino-1-cyclohexanecarboxylic acid

<220>
 <221> MOD_RES
 <222> (30)
 <223> N-epsilon-tetradecanoyl-lysine

<220>
 <223> this sequence has an amidated c-terminus

<400> 156
 His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15
 Gln Ala Ala Arg Glu Phe Ile Ala Trp Xaa Val Arg Gly Xaa
 20 25 30

<210> 157
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (2)
 <223> alpha-aminoisobutyric acid

<220>
 <221> MOD_RES
 <222> (26)
 <223> 1-amino-1-cyclohexanecarboxylic acid

<220>
 <221> MOD_RES
 <222> (28)
 <223> N-epsilon-tetradecanoyl-lysine

<220>
 <223> this sequence has an amidated c-terminus

<400> 157
 His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15
 Gln Ala Ala Arg Glu Phe Ile Ala Trp Xaa Val Xaa Gly Arg
 20 25 30

<210> 158
 <211> 30
 <212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (2)

<223> alpha-aminoisobutyric acid

<220>

<221> MOD_RES

<222> (20)

<223> N-epsilon-tetradecanoyl-lysine

<220>

<221> MOD_RES

<222> (26)

<223> 1-amino-1-cyclohexanecarboxylic acid

<220>

<223> this sequence has an amidated c-terminus

<400> 158

His	Xaa	Glu	Gly	Thr	Phe	Thr	Ser	Asp	Val	Ser	Ser	Tyr	Leu	Glu	Gly
1				5				10					15		

Gln	Ala	Ala	Xaa	Glu	Phe	Ile	Ala	Trp	Xaa	Val	Arg	Gly	Arg
			20				25					30	

<210> 159

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (2)

<223> alpha-aminoisobutyric acid

<220>

<221> MOD_RES

<222> (30)

<223> N-epsilon-octanoyl-lysine

<220>

<223> this sequence has an amidated c-terminus

<400> 159

His	Xaa	Glu	Gly	Thr	Phe	Thr	Ser	Asp	Val	Ser	Ser	Tyr	Leu	Glu	Gly
1				5				10					15		

Gln	Ala	Ala	Lys	Glu	Phe	Ile	Ala	Trp	Leu	Val	Lys	Gly	Xaa
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

20

25

30

<210> 160
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (2)
 <223> alpha-aminoisobutyric acid

<220>
 <221> MOD_RES
 <222> (14)
 <223> 1-amino-1-cyclohexanecarboxylic acid

<220>
 <221> MOD_RES
 <222> (26)
 <223> 1-amino-1-cyclohexanecarboxylic acid

<220>
 <221> MOD_RES
 <222> (30)
 <223> N-epsilon-octanoyl-lysine

<220>
 <223> this sequence has an amidated c-terminus

<400> 160
 His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Xaa Glu Gly
 1 5 10 15
 Gln Ala Ala Lys Glu Phe Ile Ala Trp Xaa Val Lys Gly Xaa
 20 25 30

<210> 161
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (2)
 <223> alpha-aminoisobutyric acid

<220>
 <221> MOD_RES

<222> (26)
 <223> 1-amino-1-cyclohexanecarboxylic acid

<220>
 <221> MOD_RES
 <222> (30)
 <223> N-epsilon-tetradecanoyl-lysine

<400> 161
 His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Arg Glu Phe Ile Ala Trp Xaa Val Arg Gly Xaa
 20 25 30

<210> 162
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (2)
 <223> alpha-aminoisobutyric acid

<220>
 <221> MOD_RES
 <222> (26)
 <223> 1-amino-1-cyclohexanecarboxylic acid

<220>
 <221> MOD_RES
 <222> (28)
 <223> N-epsilon-tetradecanoyl-lysine

<400> 162
 His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Arg Glu Phe Ile Ala Trp Xaa Val Xaa Gly Arg
 20 25 30

<210> 163
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES

<222> (2)
 <223> alpha-aminoisobutyric acid

<220>
 <221> MOD_RES
 <222> (20)
 <223> N-epsilon-tetradecanoyl-lysine

<220>
 <221> MOD_RES
 <222> (26)
 <223> 1-amino-1-cyclohexanecarboxylic acid

<400> 163
 His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Xaa Glu Phe Ile Ala Trp Xaa Val Arg Gly Arg
 20 25 30

<210> 164
 <211> 31
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Mutagen

<220>
 <221> MOD_RES
 <222> (2)
 <223> alpha-aminoisobutyric acid

<220>
 <221> MOD_RES
 <222> (26)
 <223> 1-amino-1-cyclohexanecarboxylic acid

<220>
 <221> MOD_RES
 <222> (30)
 <223> N-epsilon-tetradecanoyl-lysine

<400> 164
 His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15

Gln Ala Ala Arg Glu Phe Ile Ala Trp Xaa Val Arg Gly Xaa Gly
 20 25 30

<210> 165
 <211> 31
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (2)

<223> alpha-aminoisobutyric acid

<220>

<221> MOD_RES

<222> (26)

<223> 1-amino-1-cyclohexanecarboxylic acid

<220>

<221> MOD_RES

<222> (28)

<223> N-epsilon-tetradecanoyl-lysine

<400> 165

His	Xaa	Glu	Gly	Thr	Phe	Thr	Ser	Asp	Val	Ser	Ser	Tyr	Leu	Glu	Gly
1				5					10					15	

Gln	Ala	Ala	Arg	Glu	Phe	Ile	Ala	Trp	Xaa	Val	Xaa	Gly	Arg	Gly
			20					25					30	